A.D. 1896. JAN. 30. N° 2172.
SCHRÖDER'S COMPLETE SPECIFICATION. (1 SHEET)

[This Drawing is a reproduction of the Original on a reduced scale]

Fig. 1

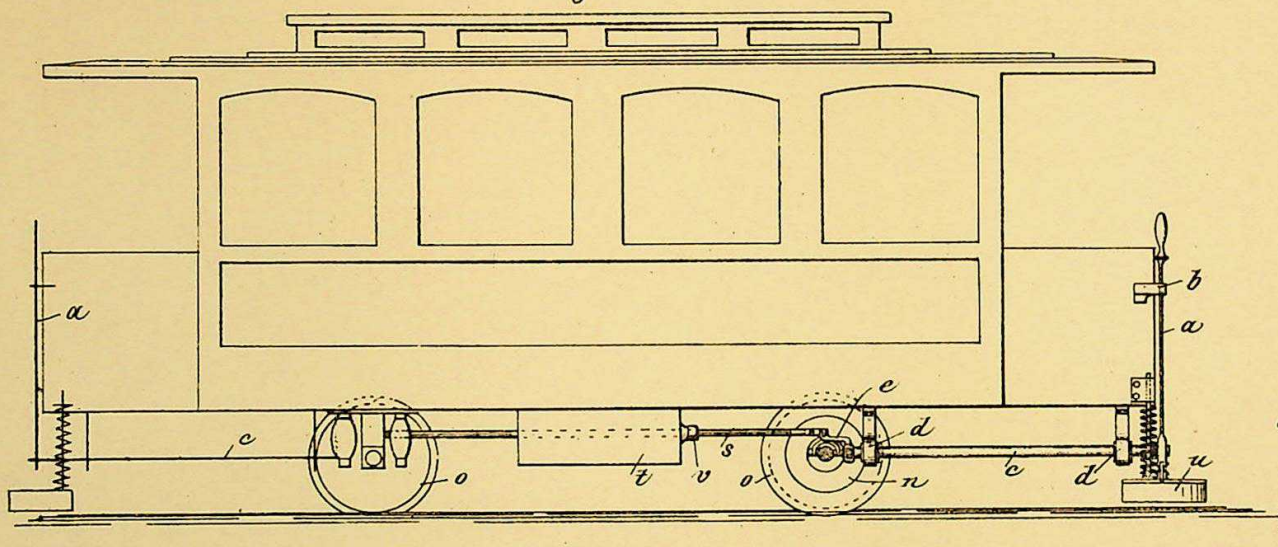


Fig. 2

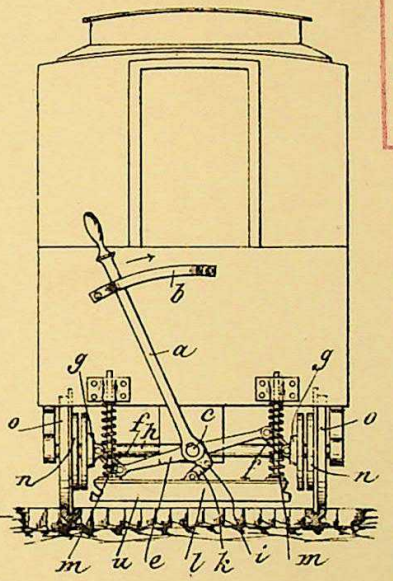
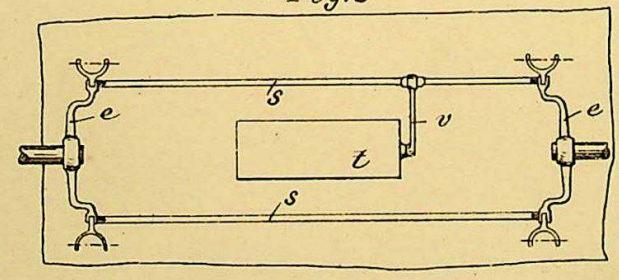


Fig. 3



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U. S. Patent Office
Malby & Sons, Photo-Litho.

9681/1
ENGLISH

Fender
Combined Brake

34

N° 2172 A.D. 1896

DUPLICATE

Date of Application, 30th Jan., 1896—Accepted, 21st Mar., 1896

COMPLETE SPECIFICATION.

Improvements in Brakes and Obstruction Removers for Tramcars.

I, CHRISTOPH LUDWIG SCHRÖDER of 5 Wilhelmstrasse, St. Pauli, Hamburg, Germany, Gentleman, do hereby declare the nature of my said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement :—

The object of this invention is a brake apparatus for tramways which, by the aid of a protective device, will prevent persons, who may inadvertently get in front of a vehicle and be thrown down, from being run over by the wheels of the vehicle.

In the accompanying drawings which show a tramway vehicle provided with my improved apparatus :—

Figure 1 is a side view.

Figure 2 is a front view of same.

Figure 3 is a plan of the lever arrangement.

The apparatus is constructed as follows :—The hand lever *a* sliding within the guide *b* is firmly keyed on the shaft *c* secured in bearings *d d*. upon which it is free to turn. At the rear part of the shaft *c* is keyed the lever *e* having two arms and connected by the intermediate piece or link *f* with the wooden discs *g* which can turn freely on the axis *h*. To the lever *a* is forged a short lever *i* connected to the protective device or pattern *l* by means of the link *k*, this device being held by the springs *m m*. When the hand lever *a*. is moved in the direction indicated by the arrow, the discs *g g* are pressed against the wooden brake discs *n n* causing the latter to bear with their large surfaces against the wheels *o* and thus to develop such an amount of friction as to bring the vehicle to an almost immediate stand still. In order to act at the same time on all the four wheels at a single motion of the hand lever *a* the levers *e e* are connected by rods *s s* Figure 3. The brakes may also be operated at each end of the vehicle. Should the vehicle be worked by electricity a lever *v* is keyed on one of the rods *s*. for the purpose of throwing the motor out of gear as soon as the brakes are applied.

When the hand lever *a* is operated in order to apply the brakes the spring suspended protective device or shoe *l* which is provided with an india rubber base *u* is likewise pressed against the pavement between the rails, and the friction developed thereby adds to or increases the effect of the brakes while preventing any human body from being run over by the wheels.

For electric tramways, the disconnecting device for the electric motor may be directly connected with the lever *a*, so that should there be any danger ahead, this motor could be likewise thrown out of gear. The same brake apparatus is set up at the other end of the vehicle, it is however only diagrammatically shown in Figure 1 of the drawings.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is :—

1st. A brake apparatus and protective device for tramway vehicles characterized by the wooden discs *g g* actuated by the set of levers *a. e f f* and *i k* mounted on the shaft *c* and which are pressed against the wooden discs or brakes *n n* coming in

[*Price 8d.*]

contact with the wheels in combination with the protective device *l* provided with an india rubber base *u* and likewise actuated by the hand lever *a*.

2nd. A brake apparatus and protecting device for tramway vehicles propelled by electricity characterized by the disconnection by the lever *v* of the electric motor at the same time as the brakes are applied with the aid of the lever *a*.

3rd. The brake apparatus and protecting device for tramway vehicles characterized by the connection through the rods *s s* of the front and rear brake apparatus in such a manner that by manœvering one lever the four discs *g g g g* are pressed against the wooden brake discs as well as the two protective devices are pressed upon the ground.

Dated this 29th day of January 1896.

GEORGE BARKER,
77 Colmore Row, Birmingham, Agent for Applicant.

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